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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,148	06/29/2001	Junya Shimoda	100809-16078(SCET 18.787)	5453
26304	7590	01/15/2004	EXAMINER	
KATTEN MUCHIN ZAVIS ROSENMAN 575 MADISON AVENUE NEW YORK, NY 10022-2585			MCCARTNEY, LINZY T	
			ART UNIT	PAPER NUMBER
			2671	

DATE MAILED: 01/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/896,148

Applicant(s)

SHIMODA ET AL.

Examiner

Linzy McCartney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7-10, 13, and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Raskar et al., “Image Precision Silhouette Edges”.
  - a. Referring to claim 1, Raskar discloses a polygon direction judging means for judging a direction of a polygon constituting a three-dimensional model, in relation to a viewpoint (page 2, column 1, paragraph 1; page 3, column 1, paragraph 6; page 4, column 1, paragraph 6) and a contour generating means for shifting vertices of a first polygon that faces a back side in relation to the viewpoint, in a direction of a normal (page 3, column 1, paragraph 6 and column 2, paragraph 2; page 4, column 1, paragraph 6), for generating a second polygon by connecting said vertices thus shifted (Fig. 2), and for painting the shifted polygon with a color that is darker than a color of the original polygon (Fig. 4).
  - b. Referring to claim 2, Raskar discloses generating said second polygon with a different quantity of shift for each three dimensional model (page 3, column 2, paragraphs 1 and 2).
  - c. Referring to claim 7, Raskar discloses judging a direction of a polygon constituting a three dimensional model in relation to a viewpoint (page 2, column 1,

paragraph 1; page 3, column 1, paragraph 6); and shifting vertices of a polygon that face a back side in relation to the viewpoint, in a direction of a normal (page 3, column 1, paragraph 6 and column 2, paragraph 2; page 4, column 1, paragraph 6), generating a second polygon by connecting said vertices thus shifted (Fig. 2) and painting the second polygon with a color that is darker than color of the first polygon (Fig. 4).

d. Referring to claim 8, Raskar discloses judging a direction of a polygon constituting a three dimensional model, in relation to a view point (page 2, column 1, paragraph 1; page 3, column 1, paragraph 6; page 4, column 1, paragraph 6); and shifting vertices of a first polygon that faces a backside in relation to the viewpoint, in a direction of a normal (page 3, column 1, paragraph 6 and column 2, paragraph 2; page 4, column 1, paragraph 6), generating a second polygon by connecting said vertices thus shifted (Fig. 2) and of painting said second polygon with a color that is darker than a color of the said first polygon (Fig. 4).

e. Referring to claim 9, Raskar discloses judging a direction of a polygon constituting a three dimensional model, in relation to a viewpoint (page 4, column 1, paragraph 6; page 2, column 1, paragraph 1; page 3, column 1, paragraph 6); and shifting vertices of a first polygon that faces a back side in relation to the viewpoint, in a direction of a normal (page 3, column 1, paragraph 6 and column 2, paragraph 2; page 4, column 1, paragraph 6), and of painting said second polygon with a color that is darker than a color of said first polygon (Fig. 4).

- f. Referring to claim 10, Raskar discloses generating said second polygon with a different quantity of shift for each three dimensional model (page 3, column 2, paragraphs 1 and 2).
- g. Referring to claim 13, Raskar discloses generating said second polygon with a different quantity of shift for each three dimensional model (page 3, column 2, paragraphs 1 and 2).
- h. Referring to claim 16, Raskar discloses generating said second polygon with a different quantity of shift for each three dimensional model (page 3, column 2, paragraphs 1 and 2).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raskar as applied to claims 1 and 7-9 above in view of Lake et al., "Stylized Rendering Techniques for Scalable Real-Time 3D Animation".

- a. Referring to claim 3, Raskar does not explicitly disclose painting said second polygon with a different color for each three dimensional model. Lake discloses rendering silhouettes (i.e., the shifted polygons of Raskar) using a darker shade of the

material color (page 17, column 2, paragraph 5). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of Raskar to color the silhouettes a darker shade of the material color as taught by Lake. The suggestion/motivation for doing so would have been because ink lines in cartoons are traditionally a darker shade of the material color (Lake, column 2, paragraph 5) and the system of Raskar is directed toward nonphotorealistic rendering applications (Abstract) such as cartoons.

b. Referring to claim 11, Raskar does not explicitly disclose painting said second polygon with a different color for each three dimensional model. Lake discloses rendering silhouettes (i.e., the shifted polygons of Raskar) using a darker shade of the material color (page 17, column 2, paragraph 5). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of Raskar to color the silhouettes a darker shade of the material color as taught by Lake. The suggestion/motivation for doing so would have been because ink lines in cartoons are traditionally a darker shade of the material color (Lake, column 2, paragraph 5) and the system of Raskar is directed toward nonphotorealistic rendering applications (Abstract) such as cartoons.

c. Referring to claim 14, Raskar does not explicitly disclose painting said second polygon with a different color for each three dimensional model. Lake discloses rendering silhouettes (i.e., the shifted polygons of Raskar) using a darker shade of the material color (page 17, column 2, paragraph 5). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of

Raskar to color the silhouettes a darker shade of the material color as taught by Lake. The suggestion/motivation for doing so would have been because ink lines in cartoons are traditionally a darker shade of the material color (Lake, column 2, paragraph 5) and the system of Raskar is directed toward nonphotorealistic rendering applications (Abstract) such as cartoons.

d. Referring to claim 17, Raskar does not explicitly disclose painting said second polygon with a different color for each three dimensional model. Lake discloses rendering silhouettes (i.e., the shifted polygons of Raskar) using a darker shade of the material color (page 17, column 2, paragraph 5). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the system of Raskar to color the silhouettes a darker shade of the material color as taught by Lake. The suggestion/motivation for doing so would have been because ink lines in cartoons are traditionally a darker shade of the material color (Lake, column 2, paragraph 5) and the system of Raskar is directed toward nonphotorealistic rendering applications (Abstract) such as cartoons.

e.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raskar as applied to claims 1 and 7-9 above further in view of Lake still further in view of U.S. Patent No. 6,361,438 to Morihira.

a. Referring to claim 4, Raskar does not explicitly disclose generating a second polygon with a smaller quantity of shift with a color closer to the color of the first polygon, as the three dimensional model exists more distantly from a screen. Lake

discloses reducing the width of the silhouette (i.e., the “fat” shifted polygon disclosed by Raskar; note that the “fattening” is accomplished by altering the distance of the edge) with increasing distance (Lake, page 17, column 2, paragraph 5). Morihira discloses that the color of the object model is closer to the color of the original model as its distance from the screen increases (column 8, lines 4-24). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the system Raskar by reducing the width of the silhouette as taught by Lake and having the color of the object model become closer to the original model as its distance from the screen increases as taught by Morihira. The suggestion/motivation for doing so would have been because the system of Raskar is directed to real-time nonphotorealistic rendering applications including animation (Raskar, Abstract, page 4; column 2, paragraphs 2 and 4), it would reduce the clutter of the silhouette edges (Raskar, page 4, column 2, paragraph 4) and it would allow the polygons to be rendered in more natural colors (Morihira, column 8, lines 24).

b. Referring to claim 12, Raskar does not explicitly disclose generating a second polygon with a smaller quantity of shift with a color closer to the color of the first polygon, as the three dimensional model exists more distantly from a screen. Lake discloses reducing the width of the silhouette (i.e., the “fat” shifted polygon disclosed by Raskar; note that the “fattening” is accomplished by altering the distance of the edge) with increasing distance (Lake, page 17, column 2, paragraph 5). Morihira discloses that the color of the object model is closer to the color of the original model as its distance from the screen increases (column 8, lines 4-24). At the time the invention was made it



would have been obvious to one of ordinary skill in the art to modify the system Raskar by reducing the width of the silhouette as taught by Lake and having the color of the object model become closer to the original model as its distance from the screen increases as taught by Morihira. The suggestion/motivation for doing so would have been because the system of Raskar is directed to real-time nonphotorealistic rendering applications including animation (Raskar, Abstract, page 4; column 2, paragraphs 2 and 4), it would reduce the clutter of the silhouette edges (Raskar, page 4, column 2, paragraph 4) and it would allow the polygons to be rendered in more natural colors (Morihira, column 8, lines 24).

c. Referring to claim 15, Raskar does not explicitly disclose generating a second polygon with a smaller quantity of shift with a color closer to the color of the first polygon, as the three dimensional model exists more distantly from a screen. Lake discloses reducing the width of the silhouette (i.e., the “fat” shifted polygon disclosed by Raskar; note that the “fattening” is accomplished by altering the distance of the edge) with increasing distance (Lake, page 17, column 2, paragraph 5). Morihira discloses that the color of the object model is closer to the color of the original model as its distance from the screen increases (column 8, lines 4-24). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the system Raskar by reducing the width of the silhouette as taught by Lake and having the color of the object model become closer to the original model as its distance from the screen increases as taught by Morihira. The suggestion/motivation for doing so would have been because the system of Raskar is directed to real-time nonphotorealistic rendering applications

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including animation (Raskar, Abstract, page 4; column 2, paragraphs 2 and 4), it would reduce the clutter of the silhouette edges (Raskar, page 4, column 2, paragraph 4) and it would allow the polygons to be rendered in more natural colors (Morihiro, column 8, lines 24).

d. Referring to claim 18, Raskar does not explicitly disclose generating a second polygon with a smaller quantity of shift with a color closer to the color of the first polygon, as the three dimensional model exists more distantly from a screen. Lake discloses reducing the width of the silhouette (i.e., the “fat” shifted polygon disclosed by Raskar; note that the “fattening” is accomplished by altering the distance of the edge) with increasing distance (Lake, page 17, column 2, paragraph 5). Morihiro discloses that the color of the object model is closer to the color of the original model as its distance from the screen increases (column 8, lines 4-24). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the system Raskar by reducing the width of the silhouette as taught by Lake and having the color of the object model become closer to the original model as its distance from the screen increases as taught by Morihiro. The suggestion/motivation for doing so would have been because the system of Raskar is directed to real-time nonphotorealistic rendering applications including animation (Raskar, Abstract, page 4; column 2, paragraphs 2 and 4), it would reduce the clutter of the silhouette edges (Raskar, page 4, column 2, paragraph 4) and it would allow the polygons to be rendered in more natural colors (Morihiro, column 8, lines 24).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raskar as applied to claim 2 above further in view of Lake still further in view of Morihira.

a. Referring to claim 5, Raskar does not explicitly disclose generating a second polygon with a smaller quantity of shift with a color closer to the color of said first polygon, as the three dimensional model exists more distantly from a screen. Lake discloses reducing the width of the silhouette (i.e., the “fat” shifted polygon disclosed by Raskar; note that the “fattening” is accomplished by altering the distance of the silhouette) with increasing distance (Lake, page 17, column 2, paragraph 5). Morihira discloses that the color of the object model is closer to the color of the original model as its distance from the screen increases (column 8, lines 4-24). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the system Raskar by reducing the width of the silhouette as taught by Lake and having the color of the object model become closer to the original model as its distance from the screen increases as taught by Morihira. The suggestion/motivation for doing so would have been because the system of Raskar is directed to real-time nonphotorealistic rendering applications including animation (Raskar, Abstract, page 4; column 2, paragraphs 2 and 4), it would reduce the clutter of the silhouette edges (Raskar, page 4, column 2, paragraph 4) and it would allow the polygons to be rendered in more natural colors (Morihira, column 8, lines 24).

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raskar in view of Lake as applied to claim 3 above further in view of Morihira.

a. Referring to claim 6, Raskar does not explicitly disclose generating a second polygon with a smaller quantity of shift with a color closer to the color of the said first polygon, as the three dimensional model exists more distantly from a screen. Lake discloses reducing the width of the silhouette (i.e., the “fat” shifted polygon disclosed by Raskar; note that the “fattening” is accomplished by altering the distance of the silhouette) with increasing distance (Lake, page 17, column 2, paragraph 5). Morihira discloses that the color of the object model is closer to the color of the original model as its distance from the screen increases (column 8, lines 4-24). At the time the invention was made it would have been obvious to one of ordinary skill in the art to modify the system Raskar by reducing the width of the silhouette as taught by Lake and having the color of the object model become closer to the original model as its distance from the screen increases as taught by Morihira. The suggestion/motivation for doing so would have been because the system of Raskar is directed to real-time nonphotorealistic rendering applications including animation (Raskar, Abstract, page 4; column 2, paragraphs 2 and 4), it would reduce the clutter of the silhouette edges (Raskar, page 4, column 2, paragraph 4) and it would allow the polygons to be rendered in more natural colors (Morihira, column 8, lines 24).

#### ***Response to Arguments***

8. Applicant's arguments filed 10/28/03 have been fully considered but they are not persuasive. Applicant argues that Raskar shifts edges, not vertices as claimed. The Examiner notes that the shifted edges contain vertices (Fig. 4 and page 3, column 2, paragraph 2), thus Raskar also discloses shifting vertices.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

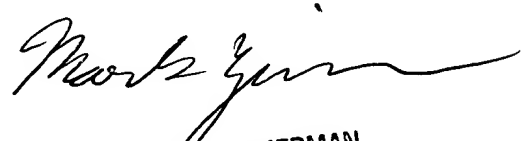
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**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 Customer Service Office whose  
telephone number is (703) 306-0377.

ltm  
December 29, 2003

  
MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600